

Notice of Allowability

Application No.

10/661,568

Applicant(s)

MORITA ET AL.

Examiner

Art Unit

Wilson Lee

2821

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--**

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to 9/15/03.
2. ☒ The allowed claim(s) is/are 1 and 2.
3. ☒ The drawings filed on 15 September 2003 are accepted by the Examiner.
4. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☒ All b) ☐ Some* c) ☐ None of the:
 1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

5. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
6. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
 - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.

Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
7. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☒ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☒ Information Disclosure Statements (PTO-1449 or PTO/SB/08),
Paper No./Mail Date 9/15/03, 10/01/03
4. ☐ Examiner's Comment Regarding Requirement for Deposit
of Biological Material
5. ☐ Notice of Informal Patent Application (PTO-152)
6. ☐ Interview Summary (PTO-413),
Paper No./Mail Date _____.
7. ☐ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____.



**WILSON LEE
PRIMARY EXAMINER**

Allowable subject matter

Claims 1 and 2 are allowed.

The following is an examiner's statement of reasons for allowance:

The prior art neither discloses nor suggests a spark plug comprising the following limitations, in combination with the remaining element of claims 1 and 2:

- a discharge gap between said center electrode and said ground electrode is less than 1.1 mm, cross sections of said center electrode and said ground electrode are equal to or smaller than 0.95 mm^2 in a spherical region where a distance from a midpoint of said discharge gap is within 0.6 mm, and the base portion is configured into a truncated conical shape having a tapered surface expanding from a top of the base portion to a bottom of the base portion such as required by claim 1;
- a discharge gap between said center electrode and said ground electrode is less than 1.1 mm, cross sections of said center electrode and said ground electrode are equal to or smaller than 0.95 mm^2 in a spherical region where a distance from a midpoint of said discharge gap is within 0.6 mm, and the center electrode comprises an iridium alloy, and the ground electrode comprises an alloy other than iridium alloy and a voltage applied to the center electrode is lower than a voltage applied to the ground electrode such as required by claim 2.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably

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accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Lykowski et al. (6,412,465) discloses the conical shape of base portion but fails to disclose the claimed dimension of the spark plug. Kanao et al. (6,346,766) discloses the claimed dimension of the spark plug but fails to disclose the truncated conical shape of the base portion and the voltage applied to the center electrode being lower than a voltage applied to the ground electrode. Yoshinaga et al. (6,265,814) discloses negative voltage applied to the center electrode but fails to disclose the claimed dimension of the spark plug.

Correspondence

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Examiner Wilson Lee whose telephone number is (571) 272-1824.

Papers related to Technology Center 2800 applications may be submitted to Technology Center 2800 by facsimile transmission. Any transmission not to be considered an official response must be clearly marked "DRAFT". The official fax number is (703) 872-9306.

Information regarding the status of an application may be obtained from the Patent Application Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status

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information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

A handwritten signature in black ink, appearing to read "Wilson Lee", written over a horizontal line.

Wilson Lee
Primary Examiner
U.S. Patent & Trademark Office

9/27/04